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Transforming Education
for Sustainable Futures



Transforming Education for Sustainable Futures: India Background Paper

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List of Abbreviations & Glossary

CBSE	Central Board of Secondary Education	UEE	Universalisation of Elementary Education
CCE	Climate Change Education	UGC	University Grants Commission
CDRI	Coalition for Disaster (and Climate) Resilient Infrastructure	UPP	Urban Practitioners' Programme
CEE	Centre for Environmental Education	UCL	University College London
CSE	Centre for Science and Environment	UCT	University of Cape Town
DPEP	District Primary Education Programme	UFABC	Federal University of ABC (region), Sao Paolo
EFA	Education for All		
ESD	Education for Sustainable Development		
EWS	Economically Weaker Section		
GDP	Gross Domestic Product		
GER	Gross Enrolment Rate		
Gol	Government of India		
HEI	Higher Education Institution		
IIHS	Indian Institute for Human Settlements		
ILK	Indigenous and Local Knowledge		
IPCC	Intergovernmental Panel on Climate Change		
JVC	Justice Verma Commission		
MECCC	Management Education Centre on Climate Change		
MIT	Massachusetts Institute of Technology		
NCERT	National Council of Educational Research and Training		
NCF	National Curriculum Framework		
NCTE	National Council for Teacher Education		
NCFTE	National Curriculum Framework for Teacher Education		
NEP	National Education Policy		
NGO	Non-Governmental Organisation		
NKC	National Knowledge Commission		
NPE	National Policy on Education		
NPO	Non-Profit Organizations		
NUA	New Urban Agenda		
OBC	Other Backward Castes		
SC	Scheduled Castes		
SDGs	Sustainable Development Goals		
SSA	Sarva Shiksha Abhiyan		
ST	Scheduled Tribes		
TEI	Teacher Education Institute		
TESF	Transforming Education for Sustainable Futures		

NITI Aayog: NITI (National Institution for Transforming India) Aayog is a policy think tank of the Government of India that provides technical advice to Centre and State governments on designing and implementing long term policies and programmes.

OBC: Other Backward Classes refers to "such backward classes of citizens other than the Scheduled Castes and Scheduled Tribes as may be specified by the Central Government in the lists prepared by the Government of India from time to time for purposes of making provision for the reservation of appointments or posts" in favor of OBC .

RtE: The Right of Children to Free and Compulsory Education Act, 2009 aims to "provide free and compulsory education to all children in the age group of six to fourteen" and serves as legislative framework to provide quality elementary education.

SC: Scheduled Castes refers to "such castes, races or tribes or parts of groups within such castes, races or tribes as are deemed under article 341 to be Scheduled Castes for the purposes of this Constitution be deemed to be Scheduled Castes in relation to that State or Union Territory, as the case may be."

ST: Scheduled Tribes refers to "the tribes or tribal communities or parts of or groups within tribes or tribal communities which shall for the purpose of this Constitution be deemed to be Scheduled Tribes in relation to that State or Union Territory"

SSA: The Sarva Shiksha Abhiyan has been operational since 2000-2001 to provide for a variety of interventions for universal access and retention, bridging of gender and social category gaps in elementary education and improving the quality of learning.

Supreme Court of India: The Supreme Court of India is the apex judicial institution of the Government of India. As the most senior and highest court of India, the Supreme court has the power of judicial review and is headed by the Chief Justice of India along with 33 other judges.

Para-teachers broadly refers to a large number of teachers recruited by the community (though not always), at less than the regular teacher pay scale, for the formal as well as Alternative Schools, to meet the demand for basic education within the limited financial resource available, in the shortest possible time.

Executive Summary

India's post-Independence education system was rooted in a century and a half of colonial institutional structures and values. Despite the foundational critique of the narrow individualistic and economic aims of modernity embedded in anti-colonial narratives, many nationalist leaders did not question the epistemic bases of colonial knowledges structured on the binaries of tradition versus modernity, subjective versus objective. Questions of equality in education that came from anti-caste discourse and movements predated the anti-colonial struggle for India's freedom. However, nationalist leaders skirted making the epistemic connection of challenging Brahmanical hegemony and patriarchy, which were strong forces in the debate on Indian state creation.

Much of the educational discourse and practice that characterises contemporary India has been deeply influenced by colonial roots and reshaped by three decades of neoliberal reforms since the early 1990s. Educational reform measures adopted in India since early liberalisation led to systemic changes in the provisioning and practice of school education, teacher education and higher education. Commitment to the Constitution-led policy frame was gradually subverted by a polity committed to privatising education and a bureaucracy committed to incrementalism and sub-optimal solutions to the several challenges of universalising quality education.

Decades of educational reform in a weak fiscal and policy environment that neglected human development and social justice in favour of economic development led to: limited state investment in education; a primary focus of that investment in creating physical infrastructure; inadequate expansion of the pool of teachers in government schools, especially in the most educationally challenged states; lack of professional support to teachers; divesting teachers of agency; narrowing curriculum to a disconnected set of learning outcomes; reducing teaching to lower order cognitive thinking and skills; and a de facto public policy that undermined the potential role of teachers in achieving equitable quality education.

As a result, the Indian state school system is still unable to offer quality teaching and learning to most children. This is despite, the passing of the Right to Free and Compulsory Education Act (RtE) and developing a progressive school and teacher education curricular discourse in the second decade of reforms in the 2000s. The system of higher education has become increasingly stratified and is governed by the interest of private institutions which have limited interest in either inclusion or quality.

Increasing commercialisation of the teacher education system led to its virtual capture by private players, accelerated by a fault line between higher and school education policy. The capture of the school teacher by private interests has led to the effective subversion of the commitment to the Constitution-led policy frame of equity and social justice. Even as the Supreme Court stepped in to disrupt the subversion of this agenda, an institutionalised nexus between an entrenched private sector in teacher education and a compromised state system continues to shape teacher education policy. Effective withdrawal of the state from its commitment to RtE through a series



of critical amendments to the Act, led to a drop in the share of student enrollment in India's state schools. More recently, persistent ideological contests in areas of curriculum and pedagogy pose new and difficult challenges in an already iniquitous society.

While the first three decades after independence saw the State's interest in investing in higher education in pursuit of modern science and technology, productivity gains and self-reliance, the expansion of higher education remained a challenge. Policies and initiatives in higher education over the past six decades indicate that India has moved from a public sector dominated higher education system to a private sector mediated system.

Even though private providers are typically driven by the motive of profit, the Supreme Court of India has given clear judgements against making profit through education and in interpreting the nature of educational institutions to be charitable. In practice, the unregulated growth, especially of for-profit higher education institutions, has led to rampant commercialisation. An expanding private higher education sector indicates a shift of the financial burden of expansion from public to individual shoulders through the privatisation of public institutions and private institutions and providers.

The wedge between the Constitutional aims of education and market-based reforms appear to have become sharper as the practice of education prioritises narrow economic self-interest, over crucial public and social concerns. A major fallout of this has been the decoupling of concerns of social justice - embedded in the Constitution-centred policy perspective on education - from those of quality education.

This is evident in the state response to the COVID-19 pandemic that has led to the closure of all educational institutions for over six months. The state is making all efforts to privilege online teaching and examinations, despite widespread economic and social asymmetry and unequal access to technology, and to curriculum materials available through digital means.

Social exclusion and inequity appear to have deepened over the years largely due to the convergence of diverse private interests with traditional conditions of privilege that have sat with the upper castes and classes, and the withdrawal of the state that was expected to play a redistributive role in this sector. The challenge of exclusion in Indian universities is not merely that of access, which reservations have tried to address to a great extent. Research shows that the structure of

higher education tends to privilege the privileged thus reproducing the hierarchies it promises to counter. It is not surprising that the growth of higher education is accompanied by widening gender, social and regional disparities.

A major public policy question is devising mechanisms to reduce inequality while expanding the education system. These may include more robust and decentralised systems of regulation and targeted public investments towards school, teacher and higher education for the socially disadvantaged. While efforts are made to create a globally competitive workforce in India, specifically via increasing private investment in higher education, the need to engage with critical development goals, ensuring liberal constitutional, democratic values and social inclusion, and furthering environmental sustainability received little attention.

Climate change is projected to impact many sectors, putting people and critical systems at risk, and detrimentally affecting India's achievement of the Sustainable Development Goals (SDGs) around of energy, health, food and water security, housing and infrastructural services. The country will face the challenge of undertaking significant climate adaptation and mitigation, the costs of which are likely to impact economic development. It is in India's interest to enhance mitigation and adaptation action by focusing on better climate science, climate change education and institutional capacity building, all of which face serious gaps and institutional deficits.

Education for sustainable cities (a third of India lives in urban areas) and communities (the two-third living in rural areas) will need to explore relevant knowledges, capacities and agency necessary to support the largest prospective urbanisation in history, as India's population approaches 1.4 billion. It will need to link this to critical interdisciplinary education within India's professional and higher education system.

There is a large unfulfilled gap between current educational programmes and this need, that a handful of institutions are attempting to close, but will need to scale-up dramatically and not be hampered by the conventional emphasis of educational practices and reforms in India. It will also have to address four forms of injustice and intersecting vulnerabilities (physical, economic, environmental and social) that lie at the heart of the operationalisation of sustainable urbanisation in India and the commitment to leave 'no person, no place and no ecosystem behind'.

The paper highlights some of the key concerns across the sectors of school, higher and teacher education. A few potential research themes that can help problematise the issues raised have been identified. An emphasis is laid on the need to build on practice-based repositories of knowledge, curricular framing and pedagogic strategies. Examining the contours of and potential for Education for Sustainable Development (ESD) includes: addressing questions of environmental, social, economic and epistemic justice in school and higher education contexts; exploring linkages between ESD and climate change education, education on sustainable cities and communities and identifying novel methods of wider public engagement and social education.

Education in India: An Overview

India has a population of 1.36 billion people¹, of which two-thirds are located in 650 thousand villages; others in 8,000 urban centres and in over 75 mega cities and metros. The state of Uttar Pradesh alone has 180 million people – similar to that of western Europe. India has the second largest Muslim population in the world – 172 million, that make up 14 percent of the total population. We have 18 official languages, each spoken by about 30-40 million people and over 1,000 active dialects. The bulk of the world's poor people live in South Asia, the largest share of which is in India. Indian society has deep historical asymmetries across gender, caste, ethnicity, language, religion, and class, some that have blurred, and others deepened by processes of modernisation and development².

At Independence in 1947, India had a population of 361 million, of which 27 percent of men and 9 percent of women were literate (Census, 1951), with a Gross Enrolment Rate (GER) of 0.17 million³ across 27 universities and about 578 colleges⁴ and an estimated 0.23 million schools with 751 primary school teachers⁵. A small share of these were private schools and higher education institutions, largely in urban areas and for the elite, most a legacy of the colonial British regime.

In 2020, India has an estimated population of 1,385 million⁶, a female literacy rate of 70 percent, a male literacy rate of 85 percent⁷; a GER of 26 percent in higher education, 993 universities, over 39,931 colleges⁸, and 8.5 million teachers, 250 million children in 1.5 million schools⁹.

There has been a significant expansion of physical capacity and access to both schools and higher education, despite the limited share of 2.9 percent of the GDP being spent on schools and 1.5 percent on higher and technical education¹⁰ (MHRD, 2018c). Unlike other countries, the attempt to pursue mass education at the primary level came only in the 1990s, while the expansion of higher education

access is yet to fully accelerate, in spite of the expressed need to respond to the opportunities of a service-sector led economy.

Belated efforts to universalise basic education were initiated amidst high regional, social and gender disparities, low public investment in education, and poor institutional capacity in the school education system, particularly in teacher preparation. Much of the emphasis from the late 1980s was on expanding access to schools in rural areas, through the creation of physical infrastructure and stop-gap expansion of the cadre of teachers. Educational reforms were focused on pedagogical renewal via the District Primary Education Programme (DPEP) funded by the World Bank, which, with other donors entered India's education sector for the first time in the 1990s. The central focus of this pedagogical renewal programme was that the teacher became the object of reform rather than a partner in educational interventions. The bulk of these funds were used for training practising school teachers, while pre-service education of teachers was grossly neglected.



These donor-led nation-wide educational reforms led to several structural changes in school education, including the setting of targets for Education for All (EFA), similar to other countries, out of socio-cultural, political and economic contexts; and an increased role of the bureaucracy in mechanical chasing of educational targets and pursuing sub-optimal trade-offs between equity, access and excellence (Batra, 2012). With a greater buoyancy in resources from domestic and donor sources, the central government also assumed a greater role in education unlike in the past where state governments led, based on a Constitutional mandate. Parallel donor-initiated institutional structures were established to manage these reforms during the Universalisation of Elementary Education (UEE), that left out a large set of existing state school education institutions.

The Sarva Shiksha Abhiyan (SSA), that built on the District Primary Education Programme (DPEP) maintained continuity with earlier Government of India reform trajectories. In time, this started to test the federal frame as education is a concurrent subject in the Indian Constitution with the primary responsibility for governance, policy and implementation resting with state governments.

¹ Source: World Bank (2019).

² Education is deeply implicated in the project of modernisation and economic growth-led ideas of development. This is evident in the first Education Commission of India (Gol, 1966) that viewed development as synonymous with a modern state, laying emphasis on how education can help embrace modernity. For a wider discussion on this see (Tikly, et al. 2020).

³ Source: MHRD (2011).

⁴ Source: MHRD (2018a).

⁵ Source: MHRD (2014).

⁶ Source: <https://www.worldometers.info/world-population/india-population/>

⁷ Source: MoSPI (2019).

⁸ Source: AISHE (2019).

⁹ Source: MHRD (2018b).

¹⁰ These figures reflect the joint share of Union and State Governments in the year 2016-2017. The Union Government's share is as low as 0.47 for school education and 0.61 for higher and technical education of that year. The Union Government's total expenditure on education as percentage of GDP shows a decline from 0.64 in 2014-15 to 0.45 in 2019-20 (CBGA, 2019).

In the higher education sector, the rapid growth of private engineering, medicine and teacher education institutions started at this time, which now dominate this sector and have also entered into general education.

Post-liberalisation education policy and practice in India, since 1991, has been increasingly influenced by a donor-led international discourse, and the interests of private players (Batra, 2012; Kumar, et. al., 2001). More recently, persistent ideological contests in areas of curriculum and pedagogy pose new and difficult challenges in an already iniquitous society. Therefore, despite developing a progressive school and teacher education curricular discourse (NCERT, 2005; NCTE, 2009), and the passing of the Right to Free and Compulsory Education (RtE) Act (Gol, 2009), the Indian state school system is still unable to offer quality teaching and learning to most children, and its higher education system is becoming increasingly stratified and governed by the interest of private institutions which have limited interest in either inclusion or quality.

Historical Context

Rooted in a century and a half of colonial institutional structures and values, India's post-Independence education system embraced a modernist worldview that saw much of knowledge as objectively constructed. It, therefore, tended to valorise 'scientific temper', productivity and output, in its search for development. Colonial education largely focussed on creating a new class of intermediaries by building an English-speaking domestic elite, and was disengaged from the socio-religious and economic realities of India's feudal, patriarchal and caste-based society. This disconnect created a major void, especially for the masses who had difficulty resonating with modernist-universalist frames of colonial thinking.

A strong counter narrative emerged in the early 20th century from anti-colonial movements, that saw the purpose of education as developing a national imaginary of a free people and society in independent India. This was supported by nationalist leaders, and further, in an important set of institutions¹¹. These counter narratives to the colonial view of knowledge and practice of education were diverse, ranging from developing an integrated people with scientific outlook and rationality to self-reliance in an economic, social and psychological sense. This vision of education was based on a foundational critique of the narrow individualistic and economic aims of modernity.

¹¹ The transfer of education to the control of provincial governments under elected Indian ministers as a result of changes introduced by the 1919 Montague-Chelmsford reforms, marked the end of direct colonial responsibility for education. Nationalist leaders understood well how education was used by colonisers to shape the minds of the young to create a subservient Indian populace. Hence, several Indian leaders invested in educational institutions that would encourage the young to understand the trajectory of the freedom struggle and to participate in its strategic interventions.

Questioning the basic assumptions of the imperial and modernist view, Gandhi's 'Nai Taleem'¹² was a response to an elite system of colonial education that was perceived to be culturally and economically irrelevant. For Gandhi, curriculum was an act of 'deliberation' – that would address the immediate needs and concerns of a colonially subjugated society – rather than one based on 'an intrinsic view of knowledge' – inherent in the modernist-universalist frame of colonial thinking (Batra, 2015: 39).

Tagore's education vision was seeded in Santiniketan¹³ where nature was the chief teacher and children enjoyed freedom and a deep bond with their educators. Embracing some forms of modernity, Tagore initiated a movement¹⁴ to popularise science amongst the masses. Sri Aurobindo's integral education¹⁵ was envisioned to develop the young towards the "true aim of human life (which) is both individual and collective", for the "individual exists not in himself alone but in the collectivity...the free use of our liberty includes also the liberation of others and of mankind" (2002: 14).



Yet many nationalist leaders rarely questioned the epistemic bases of colonial knowledges structured on the binaries of

¹² Gandhi's Nai Talim, also referred to as 'Basic Education' or the 'Wardha Scheme' was about an education that would give equal respect to intellectual and manual work.

¹³ Located about 158 km northwest of Kolkata in Bengal's rural hinterland, Santiniketan embodies Rabindranath Tagore's vision of a place of learning that is unfettered by religious and regional barriers. Established in 1863 with the aim of helping education go beyond the confines of the classroom, Santiniketan grew into the Visva Bharati University in 1921, attracting some of the most creative minds in the country. Santiniketan was created by Tagore on the principles of humanism, internationalism and a sustainable environment. Tagore developed a curriculum that was a unique blend of art, human values and cultural interchange.

¹⁴ Tagore popularized science through his idea of *loka-siksha* (popular education).

¹⁵ Integral Education aims for "a deeper harmony and peace that can only be manifested by moving beyond use of the human mind whose action is essentially separative in nature and cannot become the true basis for harmony within the individual or the society. Curriculum of Integral Education can be evolved from the three basic principles outlined by Sri Aurobindo: 'nothing can be taught'; 'the mind has to be consulted in its own growth'; and 'to work from the near to the far, from that which is to that which shall be' (See Gupta, 2014).

tradition versus modernity, subjective versus objective, as colonial education was strongly associated with both modernity, and an urban elite that took to governing a newly independent state.

Deeper questions of equality in education, came from movements that predated the anti-colonial struggle for India's freedom, and were based on anti-caste discourse and resistance to multiple forms of exclusion. Some of these struggles¹⁶ are reflected in the feminist and anti-caste writings and activism of Jyotiba Phule (1827-1890); Savitribai Phule (1831-1897); Tarabai Shinde (1850-1910) and Pandita Ramabai (1858-1922). While the political struggle for freedom led by nationalist leaders drew upon ideas of rationality and modernity to challenge colonial rule, it unsurprisingly evaded making the epistemic connection of challenging Brahmanical hegemony¹⁷ and patriarchy, which were strong forces in the debate on Indian state creation (Batra, 2020a). As a result, the policies of the colonial state that favoured Brahmanical control of knowledge (Rege, 2010; Sinha, 2017) faced little resistance and the traditional versus modern binary continued seamlessly into the post-Independence period.

India's 'modern system of education' that eulogised decontextualised universal frames of knowledge was embedded within a society entrenched in social hierarchy and power. Several attempts to bring education closer to people and their culture via language as well as social and psychological access were systematically frustrated during the post-colonial period (Batra, 2020a). This, and the neglect of a plurality of epistemes, disallowed genuine engagement with questions of structural inequalities that colonial education had succeeded in cementing in a caste-ridden society that Ambedkar¹⁸ (1891-1956) struggled against.

This is in spite of two waves of affirmative action in Indian state education: first, during the Constitution framing process when backward caste and tribal groups were given reservation (as Scheduled Castes and Tribes) in access to education and as state educators in 1950, and second, in 1990, when this entitlement was extended to Other Backward Classes (OBCs) taking the share of reserved positions to 50 percent, at which it is capped by India's Supreme Court. This has however, remained the basis of political, ideological and economic contest for over 70 years. This is still being negotiated legally and politically, in the midst of a

¹⁶ There were several movements across the Indian subcontinent that used modernity to challenge casteist practices especially among communities that saw education as key to liberation from Brahmanical hegemony. Later, Ambedkar's social and political thought built on some of these ideas, became the bedrock of Dalit women's struggle.

¹⁷ This term implies dominance of upper caste over backward, schedule castes and tribes in India.

¹⁸ B. R. Ambedkar was independent India's first Minister of Law and Justice, the chief architect of the Constitution of India, and a founding father of the Republic of India. He earned two doctorates in economics from Columbia University and University of London, gaining reputation as a scholar for his research in law, economics and political science. He was deeply involved in public education, published journals, advocated political rights and social freedom for Dalits, and contributed significantly to India's independence and the establishment of the state of India.

deep contest between a distributive social justice paradigm, and an inclusive growth paradigm.

Proof of this is in the fact that the curriculum for preparing school teachers, firmly embedded in the colonial frame, was left undisturbed for over 65 years till the second decade of the 21st century¹⁹. Deep colonial roots of the modern school education system resisted change even as post-colonial India attempted to decolonise knowledge practices²⁰ via its centres of higher education, which were designed by policy to be disconnected from each other.

Contemporary Challenges

Much of the educational discourse and practice that characterises contemporary India has been deeply influenced by colonial roots, reshaped by over three decades of neoliberal reforms since the early 1990s. In a return to some origins of 19th century thinking, many elements of the international education project²¹ that drives these reforms are entwined with ideas of modernity and development that were embedded in coloniality (Batra, 2020a). These reforms have not only altered institutional structures but sought to peripheralise post-colonial Indian education policy and practice. This perceived deficit led in the 2000s to extensive policy 'borrowing' via a 'global epistemic community' and processes of 'internationalisation' of school and higher education, with benchmarks set to 'world-class' standards. In this we have seen a disruption of diverse processes of decolonisation and the creation of subaltern knowledges via a reform policy transfer – constructed in decontextualised abstraction, rationalised and accelerated by a target driven universal agenda (Batra, 2019).

Based on the human capital approach, this neoliberal agenda for education is designed to fulfil individual aims and self-interest defined in narrow economic terms. This has created a wedge between the needs of society and formulation of policy. According to Pinar (2015: 223) neoliberal reforms mirror colonialism that "increases cultural dependency and political subjugation while encouraging modernisation with its rhetoric of rights and reparation." Contained within the human capital approach, education systems in India have continued to build on the view that employability and economic growth are the chief aims of school and higher education, relegating the Constitutional values of equality, justice and fraternity and hence, active citizenship to the sidelines.

¹⁹ The Bachelor of Education (BEd), a legacy of the 'normal schools' set up during colonial rule, was for the first time redesigned in 2015, from a one-year programme to two-years, containing several critical ideas rooted in decolonized knowledges, based on the National Curriculum for Teacher Education (NCTE, 2009).

²⁰ Critical social science research in India has made major contributions in this regard.

²¹ The term 'international education project' is being used here as an umbrella term that indicates the convergence of a host of international think tanks and players: global networks and projects, including bilateral agencies that form part of an international education community such as the EFA and a global epistemic community that Stephen Ball talks about (Ball, 2012).

Educational reform measures adopted in India since early liberalisation have led to systemic changes in the provisioning and practice of school and teacher education. Despite judicial intervention²², state withdrawal from the responsibility of developing institutional capacity to prepare teachers led to a de facto public policy that undermines the potential role of teachers and their education in achieving equitable, quality education. The policy narrative constructed around quality and knowledge created a logic of marginalising the teacher, undermining her agency and the need for epistemic engagement. Commitment to the Constitution-led policy frame was gradually subverted by a polity committed to privatising education and a bureaucracy committed to incrementalism and sub-optimal solutions to the several challenges of universalising quality education (Batra, forthcoming).

As India entered its second decade of neoliberal reforms in the 2000s, the challenge before educators was to reposition curricular knowledge as the fulcrum of sustaining a constitution-led vision of education towards equity and social justice. This opportunity came around the National Curriculum Framework (NCERT, 2005) and the National Curriculum for Teacher Education (NCTE, 2009). They established the need to re-contextualise knowledge in curriculum with the passing of a central legislation that made the right to education (RtE) a fundamental right (Gol, 2009). With a change in political regime, more recent neoliberal policies appear to have again succeeded in severing processes of teaching and learning from curricular concerns of equity and social justice.

An internationally anchored discourse constructed around teachers, their education and practice have led to narrowing curriculum to a disconnected set of learning outcomes and putting the onus of learning on the child (Batra, in press). In the absence of robust institutional monitoring of the RtE and poor fiscal and teacher provisioning, this Act too has become a target of neoliberal reform leading to its dilution.



The wedge between the Constitutional aims of education and market-based reforms have become sharper as the practice of

²² The Justice Verma Commission (JVC) was constituted by the Supreme Court in June 2011 to address complaints of widespread malpractice, policy distortions and regulatory conflicts in the sector of teacher education.

education prioritises narrow economic self-interest, over crucial public and social concerns. This has gradually hollowed out the Constitution-centred policy perspective on education as critical to the needs of India's disadvantaged and plural society. A major fallout of this has been the decoupling of concerns of social justice from those of quality education. Questions of curriculum, linguistic and social diversity in classrooms, locating learning in social-cultural contexts and developing teachers' professional repertoires and agency in bringing about social transformation are no longer central to the education policy²³ discourse (Batra, 2020b).

This is evident in the state response to the COVID-19 pandemic that has led to the closure of all educational institutions for over six months. The state is making all efforts to privilege online teaching and examinations, despite widespread economic and social asymmetry and unequal access to technology, and to curriculum materials available through digital means (Batra, 2020c).

School Education

Led by the Constitutional frames of justice, liberty, equality and fraternity, early post- Independence India laid emphasis on the development of a strong public school education system (Gol, 1966). This, however, failed to translate into concerted policy on mass education as evident in India's first education policy (Gol, 1968). Naik (1975) talks about the challenges of reconciling the constitutional goals of equality, freedom, justice and dignity of individuals with the deep-seated hierarchies and stratification inherent in Indian tradition. Public education was largely state government led, with the Central government providing resources and some attempts at addressing complex issues of national coordination (e.g. on questions of language) and quality. There was little or no presence of multilateral or international donors.

The beginning of structural compromise on the question of equitable education started with a shift in policy (Gol, 1986), when legitimacy was accorded to non-formal centres of education with the purported aim to equalise educational opportunity for the marginalized (Velaskar, 2010). The establishment of model schools such as the Navodaya Vidyalayas in the rural hinterland prioritised 'quality for some' over 'quality access to all' (Nambissan and Batra, 1989; Kumar, 2010). These policy shifts signaled masking as well as perpetuating educational inequalities.

As indicated earlier, concerted efforts towards achieving UEE began in India only in the last decade of the 20th century. Educational reforms were initiated post-Jomtien²⁴, in the early-1990s, when literacy rates in the country were at 52 percent and gender disparity was over 20 percent. Current literacy rates are at an average of 74 percent with a gender disparity still hovering at 18 percent (Census, 2011). The post-Jomtien education reforms coincided with a first (1984-1990) and second wave of economic liberalisation and reform (1991-2014).

²³ This refers to the National Education Policy (NEP) 2020.

²⁴ The World Conference on Education for All was held in March 1990 in Jomtien, Thailand.

The first decade of reforms led to increased school enrolment, but the state school system was inundated with cadres of poor quality 'para-teachers' and learning achievement levels showed little improvement. This led to the indiscriminate mushrooming of unregulated private schools, encouraged by global policy advocacy and neo-liberal measures. Institutional capacity to prepare teachers remained neglected in the second decade of reforms starting in the 2000s, stripping teachers of intellectual agency. This led to deeper penetration of the market into a non-commercial sector of teacher education, that the Supreme Court has continually affirmed.

Decades of educational reform in a weak fiscal and policy environment that neglected human development and social justice in favour of economic development, have led to: limited state investment in education; a primary focus of that investment in creating physical infrastructure; inadequate expansion of the pool of teachers in government schools, especially in the most educationally challenged states; lack of professional support to teachers; divesting teachers of agency; narrowing curriculum to a disconnected set of learning outcomes; reducing teaching to lower order cognitive thinking and skills; and a de facto public policy that undermined the potential role of teachers in achieving equitable quality education.

In a surprising break from decades of commitment to the status quo²⁵, elementary education became a fundamental right in 2009. This came at a time when the state school system was deeply fractured – perceived as dysfunctional, with a huge shortfall of teachers and the presence of large numbers of untrained teachers. Enrolments in state schools started to decline while those in unregulated private schools mushroomed across large parts of the country. The low-fee private school sector grew rapidly in some of the most backward states that faced poor learning levels, high teacher shortage, and poor institutional capacity to train teachers.

Drawing upon the successful experience in engineering and medical higher education, a large number of private players set up 'teaching shops' to respond to the expanding demand for professionally qualified teachers. Increasing commercialisation of the teacher education system led to its virtual capture by private players, accelerated by a fault line between higher and school education policy. By the 2010s, while close to 80 percent of children studied in state schools²⁶, their teachers came from a teacher education system with over 90 percent of teacher education institutes in private hands (Gol, 2012).

This and the effective withdrawal of the state from its commitment to RtE through a series of critical amendments to

²⁵ The demand for compulsory primary education in India was first initiated by Gopal Krishna Gokhale, member of the Imperial Legislative Council through a private Bill in 1911.

²⁶ This figure has reduced considerably since then as a result of declining school enrolment in state schools.

the Act, led to a drop in the share of student enrollment in India's state schools. The share of India's state schools²⁷ declined to 65 percent as parents preferred private schools in search of quality. Currently, India is one of the four South Asian countries where about one-third of children from 6 to 18 years of age attend private schools (World Bank, 2017); and learning levels continue to stagnate across several states (ASER, 2019). This is one of the causes of a serious education crisis during the COVID-19 pandemic, because a large number of private schools face bankruptcy and hence closure, as several people having lost livelihoods are unable to afford even low-fee structures. Some states are seeing a return of students to state schools which needs to be taken as an opportunity to revitalise the state school system. Private lobbyists on the other hand, are advocating for the state to bail out these schools as MSMEs (CSF, 2020).

Multiple attempts at systemic reform of the school education system to address interlinked challenges have (except for some states) largely failed to institutionalise universal quality education and address the growing learning crisis. Poor state investment in school education, left little institutional scope to address the critical challenge of quality education.

Ignoring the need to address complexities of India's diverse classrooms and the preparedness of teachers to address diversity has led educational policy to focus on what seems pragmatic i.e. outcome-based notions of quality. A policy narrative was systematically built in the 2000s to focus attention on learning assessment and not on creating meaningful learning experiences for children. This led to severing notions of 'learning' from 'pedagogic processes' and 'teacher professional judgement' (Batra, forthcoming). The contemporary discourse on learning crisis does not acknowledge the effects different kinds of inequalities, such as class, caste, race, ethnicity, gender and disability have on the learning outcomes of disadvantaged learners (Tikly, et al, 2020).

The primary focus on learning outcomes has induced several state schools to create segregated learning environments, such as separate English medium sections. Educational inequality deepened with the entry of all shades of private schools as well as within the state school system. This has, in turn, exacerbated existing social, economic, gender and regional inequalities. If this persists, India's demographic dividend propelled by 365 million young people (15 to 30 years old (UN, 2019) could well turn into a nightmare (Reddy, 2006).

A large number of state schools have been merged, closed down with the aim to rationalise schools that are economically unviable and sub-optimal. As per NITI Aayog, in 2018 alone, about 40,000 schools have been merged in Madhya Pradesh, Orissa and Jharkhand²⁸. This has had a direct impact on the most marginalised groups and girls living in remote habitations, threatening their fundamental right to access elementary

²⁷ Unified District Information System for Education (UDISE, 2018). Source: <http://udiseplus.gov.in/mainhome#>.

²⁸ NITI Aayog reference

education. Critical amendments to the RtE – doing away with the ‘no-detention’ policy and declaring the ‘right to education’ as ‘right to learning’ – are moves towards institutionalising a minimalist education for the most vulnerable, running the risk of pushing them permanently out of the fold of education.

The deliberative shift of the fundamental ‘right to education’ to a mere ‘right to learning’ runs the risk of dismissing the larger context, purpose, nature and goals of education, including its role as a driver for sustainable development. This conceptual shift has enabled the NEP (GoI, 2020) to seek to bring the Central legislation in line with the minimalist idea of quality education. A further policy recommendation of making the RtE Act “substantially less restrictive” in terms of norms, creates a major policy opening for: large scale provisioning of elementary education via ideologically driven and profit-making enterprises. This effectively creates a trajectory to nullify India’s fundamental Right to Education.



A multi-tiered education system has emerged with different grades of state schools, accessibility based on ability, low-fee private schools that deliver low quality education with a sheen of quality and access to English language teaching, and an increasingly internationalised system of private schools for the elite, especially in metropolitan and urban areas. The NEP 2020, may well concretise this deep educational inequality by blurring the boundaries between social justice and economic conditions; and institutionalising segregation in India’s public education system via centralisation of educational governance²⁹.

Teachers and Teacher Education

Major Education Commissions and Committees on education³⁰ since independence have highlighted the critical need to reform India’s

²⁹ See : [Is NEP 2020 Designed to Deliver Equitable Quality Public Education?](#)

³⁰ The Education Commission (1964-66) recommended professionalization of teacher education; The National Commission on Teachers (1983-85) recommended five-year integrated courses and internship; and The National Policy on Education (NPE) (1986) recommended the overhaul of teacher education. The NPE Review Committee (1990) and the National

teacher education sector. Several attempts have been made to release it from the clutches of colonial framing, institutional structures and practices, and ground it in contemporary school realities and frontiers of decolonised knowledge (Batra, 2005). Yet the sector has remained largely stagnant for the last 70-odd years and has been captured by private interests since the 1990s, which even India’s Supreme Court has been unable to rescue it from (GoI, 2012).

This situation has been exacerbated by a range of inappropriate policy measures. Large-scale recruitment of para-teachers within the formal school system became an integral part of state elementary education policy, since the mid-1990s. This came from an attitude of resignation among education policymakers of making a change in pre-service teacher education. Adopting low investment strategies, including the hiring of para-teachers in states with high dropout rates of school children, low participation rates and low achievement levels (Ramachandran, 2003), weakened the structure of state primary education, jeopardising the already poor quality of schooling (Batra, 2005).

The setting aside of the potential role of teacher education in achieving equitable quality education was an act of deliberative policy. Consequentially, teacher education capacity in some of the most educationally challenged states like Assam, Bihar, Chhattisgarh, Jharkhand, Orissa, Uttar Pradesh and West Bengal continues to be grossly inadequate. Several states replaced pre-service programmes by in-service programmes to train para-teachers (now referred to as contractual teachers), thereby ‘institutionalising’ the decline of quality education in the concerned states (Batra, in press).

The most recent estimates noted in the Draft National Education Policy (GoI, 2019), show that “the country faces over 1 million teacher vacancies – a large proportion of them in rural areas – leading to pupil-teacher ratios (PTRs)³¹ that are even larger than 60:1 in certain areas.” As per AISHE (2019) estimates³², a total of 0.51 million candidates graduated in secondary teacher training and close to 0.1 million graduated in elementary teacher training. These are woefully inadequate figures given the challenge of the large number of teacher vacancies, compounded by the fact that only 15 percent of graduates qualified (for elementary level) to become teachers as per TET requirements³³. What the system needs, as per UDISE data³⁴ and in alignment with RtE norms, is approximately 0.8 million teachers to

Advisory Committee on Learning without Burden (1993) have also drawn attention to the need for qualitative reform of teacher education and suggested various measures.

³¹ The mandated pupil-student ratio is 30:1 as per RtE norms.

³² This includes BEd, BSc/BA-BEd for secondary teacher education and DEEd or DEEd for elementary teacher education. AISHE data does not make mention of the BEEd degree of elementary education that could account for a few hundred graduates every year.

³³ Out of a total of 23.77 lakh who appeared for the CTET exam in July 2019, 14.80 percent qualified. This an improvement over the past years when percentage of those qualifying STET and CTET have been as low as 5-7 percent. <https://www.businesstoday.in/latest/trends/cbse-ctet-2019-results-out-in-record-23-days-35-lakh-candidates-qualify-here-is-how-to-check-scores/story/369103.html> Accessed on 2 March, 2020.

³⁴ Source: <http://udiseplus.gov.in/mainhome#> Accessed on 8 January, 2020.

cater to a school population of 25 million elementary and secondary children in the existing 1.5 million schools.

In addition, two pivotal innovations of the 2000s, the RtE and NCF, glossed over the need for an implementable road map to develop the teacher as the chief catalyst of socially just education. The connection between poor learning outcomes and inadequate learning environments failed to capture the imagination of most policymakers and researchers. Thus, policy measures were planned in complete denial of the fact that the bulk of elementary school teachers are under-qualified, mis-qualified or untrained. As a result, in 2020, the bulk of schoolteachers across the country remain under trained, under-compensated, and reduced to demotivated instruments of a utilitarian system of education that was initially conceived to support a colonial regime (Batra, in press)³⁵.

It took a Supreme Court appointed high powered Commission – The Justice Verma Commission on Teacher Education – (Gol, 2012), to unveil the reality of teachers and teacher education: the reality that the bulk of teachers are trained and qualified through the sub-standard private system of ‘teaching shops’ that fail to address the pedagogic needs of diverse classrooms; that a small but significant number of teachers are poorly prepared through pre-service public institutions that are severed from centres of higher learning and use largely outdated curricula and pedagogy. The Commission noted that the number of private teacher education institutions (TEIs) increased manifold in the years preceding the RtE, and that the NCTE failed to control the proliferation of sub-standard TEIs, leading to rampant privatisation and commercialisation.

The massive increase in the number of private TEIs over the years has created an imbalance in favour of urban areas in the spread of teacher preparation facilities. This adversely affected access to teacher education among marginalised groups, especially in rural and relatively remote areas. “Many districts that have a lower intake ratio in teacher education institutes in most of the states are those having SC and ST populations of more than 25 percent. States³⁶ having surplus teachers also have lower intake ratios in districts with SC and ST populations of over 25 percent” (Batra, 2012: 5).

The number of recognised private teacher education institutes³⁷ continued to grow by 13 percent over 2011-19. While the relative arrest of private expansion of TEIs post-2011 can be attributed to JVC’s disapproval of sub-standard private ‘teaching shops’, its recommendation to increase state investment in teacher education to fill this gap goes unheeded and finds no mention in NEP 2020.

³⁵ Scholars have argued how the concept and content of teacher training; the model lesson and supervision norms have remained unchanged for over a century (See Krishna Kumar, 2005 and Poonam Batra, 2005).

³⁶ These include Kerala, Gujarat, Punjab and Uttarakhand.

³⁷ Source: <https://www.ncte.gov.in/Website/RecognizedInstitutions.aspx> Accessed on 6 January, 2020.

Despite intervention by the Supreme Court of India, state investment in teacher education continues to be low and teacher education remains isolated from the higher education system. While the share of funds for school education declined from 1.3 percent in 2009-10 to 1.1 percent in 2018-19, states with large numbers of professionally unqualified teachers (Uttar Pradesh, Chhattisgarh, Bihar and West Bengal) continue to spend less than 1 percent of their school education budgets on teacher training (Kundu, 2019).

Several target-oriented policy measures, including teacher education reforms taken to UEE, proved detrimental to the cause of equitable quality education in the country. A systematic set of measures helped institutionalise inequity, jeopardising children’s learning levels. The early gains of physical and social access of SSA and UEE ceased to yield sustainable results, as evident in stagnant achievement levels³⁸. A multi-tier system of school education in terms of resources and quality; the proliferation of para and contractual teachers; state withdrawal from the institutional responsibility of creating appropriate cadres of school teachers; and the near absence of teachers in conversations on devising strategies to improve school education have together contributed towards making the state system dysfunctional and unattractive.

Instituting and sustaining quality education remains a key challenge facing Indian school education after it is close to achieving near universal access. As a result of state inability to address the complexity of diverse classrooms and limited teacher preparedness, policy debates on quality education in India, mirroring the international discourse shifted in the 2000s to learning outcomes – measures that were easy to scale up. This enabled the normalisation of a policy discourse that hinged on ensuring tangible but minimalist educational outcomes for the masses – learning achievement scores and teacher accountability. The focus on learning outcomes has decoupled concerns of social justice from quality education, essentialised teacher knowledge and undermined teachers’ epistemic identity.

Teachers and their preparation remain the critical missing link in a system that strives to address issues of equitable quality education. Teachers were trained to implement minimalist agendas built around ‘practical knowledge’ that is positioned as key to ensure student learning. Established national regulatory and curriculum frames have been unable to address local concerns, languages and knowledges. As a result, teachers – stripped of intellectual and political agency – were gradually made complicit in fulfilling this minimalist reform agenda.

Teacher education suffered from years of intellectual isolation as a result of rigid and unimaginative regulatory norms and the proliferation of sub-standard private TEIs that were severed from Universities. The gross state neglect of institutional capacity

³⁸ Wilima Wadhwa (Wadhwa, 2019, p. 19) suggests that the extremely worrying trend from an equity point of view is that “in each successive cohort more and more children are getting stuck at the bottom end of the distribution”.

building left major gaps in the preparation of teacher educators. In the absence of a robust teacher educator community, a culture of uncritical engagement with questions of educational theory and practice has been normalised.

The counterpoint to this was the National Curriculum Framework for Teacher Education (NCFTE), 2009 that built on the RtE regulatory space, and the NCF to create a deliberative discourse on the social context of teaching and learning. It aimed to break the false neutrality and “apolitical posture” within which teachers are usually prepared. The NCFTE laid the base for student teachers to relate formal knowledge with lived experiences and to problematise social realities they may wish to change. This reflective engagement had the promise of developing a discerning shift in perspective from the passive acceptance of social inequity to a syncretic response within a diverse and locally rooted society.

This systemic innovation was not taken to scale due to lack of state vision and an increasing commitment to neoliberal policies. In-service and pre-service teacher education programmes continued to give premium to the practical knowledge of teachers; dismissed the importance of theoretical engagement; and in some cases even suggested to replace university-based programmes with short-term certificate programmes. While intervention of the Indian Supreme Court led to an increase in the duration of pre-service teacher education, little was done to facilitate states to enhance institutional capacity to translate the NCFTE vision into reality. Problems of weak epistemological underpinnings of teacher knowledge, unproblematized conceptions of school knowledge, and the essentialising of teacher knowledge within the frame of a neoliberal agenda continue to prepare teachers ill-equipped to handle diverse classrooms.

Recent attempts to revive the moral ideals of cultural nationalism aligned with a neo-liberal thrust on learning outcomes and teacher performativity have further marginalised the role of the teacher and knowledge. The NEP 2020 vision of standardising the education of teachers across the country via a single curriculum and design model, goes against the reality of a diverse society and diminishes the NCFTE and JVC defined role of the university in designing curriculum. Outsourcing of in-service training of teachers to private agencies, and the growing influence of philanthropic institutions in public policy, as outlined in NEP 2020, undermines the needs and challenges of diverse and iniquitous Indian classrooms. The current policy discourse, informed and shaped by the episteme of reforms reflects a political subversion of the role of a socially transformative education, promised in the Constitution of India (Batra, forthcoming).

The capture of the school teacher by private interests has led to the effective subversion of the commitment to the Constitution-led policy frame of equity and social justice. Even as the Supreme Court stepped in to disrupt the subversion of this agenda, an institutionalised nexus between an entrenched private sector in teacher education and a compromised state system continues to shape teacher education policy.

Higher Education

Universities were set up in India by the British to serve two purposes: to produce manpower for their administration and to co-opt the Indian elite by enculturation into ‘superior’ European culture. Although supposedly modelled after the University of London, the institutions set up by the British in India were not structured to acquire the academic level and calibre of the University of London (Ashby and Anderson, 1966; Basu, 1974). They resembled it only in outward form. Through the decades after the establishment of the first Presidency Universities in Bombay, Calcutta and Madras in 1857, this approach in the establishment of universities in India had an inevitable result. Syllabi focused on acquainting Indians with European literature, philosophy, history, ideas, languages and so on, rather than on analysis or critical thought. Even the creation of the Indian Institute of Science, India’s leading science university, through an act of philanthropy by an Indian industrialist of the time, was subverted so that it would have no engagement with the social and behavioural science or the humanities, as originally conceived (Balaram, 2009). The emphasis on acquiring and retaining the information that was imparted created an academic culture that was passive and meekly receptive. In this culture, education became a means of certification towards employment and status (Chitnis, 1993), a legacy that stands strong even today.

Nationalist leaders such as Tagore and Gandhi helped establish new nationalist universities with the objective of reviving indigenous cultures and educating the youth to participate in the struggle for a free India. The call for students during Gandhi’s Non-Cooperation movement of 1920, to quit their colleges and support Congress-sponsored ‘national colleges’ received immense support. Although the national colleges were short-lived, the traditional colonial educational edifice was temporarily thrown into confusion.

During the struggle for independence, Gandhi’s alternative vision of having rural India at the centre of economic growth was not very appealing to the emerging Indian elites. Yet, some traces of the idea of a rural university can be seen in the first education commission of independent India – University Education Commission of 1948-49. Chaired by the philosopher S. Radhakrishnan, this Commission with humanist, educational and socio-economic ideals, remains largely unaddressed. Most higher education institutions in 2020 are situated in and around an urban centre or city.

By the time India became independent, a large fraction of the upper castes and classes in urban India had moved away from their culture(s) towards a ‘western’ style of life. University education accelerated the pace of this movement. The implicit faith in the superiority of Western knowledge and learning remained even after independence (Chitnis, 1993). Even though Universities made efforts to strengthen ideas around language and identity, opening up the debate on language of instruction in school and higher education, the colonial western model of higher education, as argued by Ashby and Anderson (1966) became integral to contemporary India.

The Education Commission of 1964-66 chaired by D. S. Kothari, embodied the developmental ideology of India of the 1950s and 1960s. The Bombay Plan of 1944 and post-war plan played a critical role in drafting this approach. The Kothari Commission emphasised the setting up of metropolitan universities. This idea was in consonance with the urban-centric Indian planning process (Chowdhary, 2017). The first three decades after independence saw the State's interest in investing in higher education in pursuit of modern science and technology and the industrialisation, productivity gains and self-reliance that was meant to come with it³⁹. Some of India's leading technological, management, research and academic institutions were established in this era where higher education was seen as instrumental in developing a modern state. As a fall-out, elementary and school education languished with dire later consequences for India's human and economic development.

The weight of the historical past was a heavy burden for Indian higher education – one that the mainstream academic system has been unable to break. As argued by Altbach (1993), the will to part from the past or even to open up the system in significant new directions has been lacking.

The expansion of the higher education sector in India has been impressive but challenged. Between 1950-51 and 2012-13, the number of universities and institutions of national importance increased from 27 to 665; and to 691 in 2013-14; colleges from 578 to 36,000, and students from around 0.2 million to 30 million. Currently, India has 993 universities – an increase of almost 31 percent since 2014. Among 993 Universities, 385 Universities are privately managed and 394 Universities are located in rural areas.

The expansion has been the fastest in the 2000s. Student enrolment increased from about 9 million in 2001-02 to 30 million in 2012-13. This implied an annual addition of around 2 million students to the sector, making it the highest expansion for any decade. The overall Gross Enrolment Ratio (GER) increased from 24 in 2014-15 to 26 in 2018-19. For the Scheduled Castes, the GER increased from 19 in 2014-15 to 23 in 2018-19; and for the Scheduled Tribes it increased from 14 to 17 in the same period (AISHE, 2019). GER varies considerably across States, although it has generally increased in all the States.

The expansion process led the country to enter into a stage of potential massification of higher education. A closer examination of evolution of policies and initiatives in higher education in India over the past six decades indicates that India has moved from a public sector dominated higher education system to a private sector mediated system. At present, more than three-fifths of the enrolment in higher education in India is accounted for by private higher education institutions. The massification of higher education in India relies more on market forces and private institutions than on public institutions and public funding. Unlike in the developed countries where massification was facilitated through public institutions, in India, this process is market-

mediated and the non-state actors play an important role (Varghese, 2015).

Private presence in higher education got a fillip starting in the mid-1980s, coinciding with a reduced investment by the Government of India (GoI) and the states. A tertiary-level educated workforce was seen to become a constraint to sustain service sector growth rates and led to greater investments in higher education (Varghese, 2012). The Central governments' acceptance of the World Bank (Salmi, 1994) prescription that education is essentially a 'non-merit' good opened up the higher education sector to market forces. This meant (a) reduced state funding in higher education; (b) increasing presence of the private sector in higher education; (c) a rise in student fees; (d) the introduction of capitation fee; and (e) pushing universities to mobilise private funding even at the cost of compromising basic aims and values of higher education (Das, 2007).

India even increased its budgetary assistance to private education institutions in terms of expenditure on education from 45 percent in 1990-91 to 48 percent in 2000, at a time when public funding for public institutions had registered a decline. Not surprisingly, by 2001, 42 percent of higher education institutions in India became privately owned, catering to 37 percent of the enrolled students in this sector (Das, 2007).

India has witnessed an unprecedented growth of the private sector in higher education. Over 75 percent of higher education institutes (HEIs) are in the private sector with more than 65 per cent of the student enrolment in India (AISHE, 2019). A major part of India's private higher education surge came from the proliferation of private self-financing colleges mostly in the areas of technical and professional education. Privatisation of higher education is especially noticeable in higher education professional courses such as engineering and business administration (Sudarshan and Subramanian, 2016) and teacher education (GoI, 2012).

The unregulated growth, especially of for-profit institutions, has led to rampant commercialisation. With an expanding private higher education sector, the financial burden of expansion of higher education has systematically shifted from public to individual shoulders through the privatisation of public institutions and private institutions and providers (Varghese, 2012).

The government's view on higher education as a marketable commodity shifted further as it proposed "full cost recovery from students and immediate privatisation of entire higher education" as recommended by the Birla-Ambani Committee (GoI, 2000). With this, the Government of India started the process of entrusting higher education provision to the private sector, encouraging most states to initiate private university legislation, cost recovery from students, and loans and grants to economically and socially weaker sections. Yet, the National Knowledge Commission (NKC)⁴⁰ set up in 2005 did not encourage for-profit educational institutions. The Yashpal

³⁹ This was emphasized in the Second five Year Plan (1956-61).

⁴⁰ Report to the Nation: 2006-2009, National Knowledge Commission, March 2009, <http://www.aicte-india.org/downloads/nkc.pdf>.

Committee⁴¹ set up in 2008 suggested that private institutes of higher education should not be driven by the sole motive of profit. However, both recommended that it is essential to stimulate private investment in higher education to extend educational opportunities. Even though private providers are typically driven by the motive of profit, the Supreme Court of India has given clear judgements against making profit through education and in interpreting the nature of educational institutions to be charitable⁴².

Sustained Inequality in Higher Education

India has carried the burden of double exclusion for well over two centuries. First, in the form of its colonial past that left large parts of the country underdeveloped and in extreme poverty; and second, its social hierarchies of caste, gender and religion. Social exclusion and inequity appear to have deepened over the years in spite of an apparently modern system of education. This is largely due to the convergence of diverse private interests with traditional conditions of privilege that have sat with the upper castes and classes, and the withdrawal of the state that was expected to play a redistributive role in this sector. Despite having achieved an impressive expansion of higher education infrastructure and enrollment, India's social, gender and regional disparities continue to pose a challenge, especially in the wake of increasing privatisation of higher education.

Post-Independence, higher education has played a decisive role in addressing social, gender and economic inequalities via measures of affirmative action. The challenge of exclusion in Indian universities is not merely that of access, which reservations have tried to address to a great extent. Deshpande & Zacharias (2013) argue how students encounter various forms of exclusion once they enter institutions of higher education. There is substantial evidence to show that access to higher education can overcome rigid inequalities of caste, class, religion and gender. Yet, the structure of higher education tends to privilege the privileged thus reproducing the hierarchies it promises to counter.

⁴¹ Report of the Committee to Advise on Renovation and Rejuvenation of Higher Education, 2009, http://mhrd.gov.in/sites/upload_files/mhrd/files/document-reports/YPC-Report.pdf.

⁴² The Supreme Court order states that "there should be no capitation fee or profiteering"; and that "the expression "education" in all the Articles of the Constitution would mean and include education at all levels, from primary education level up to post graduate level and the expression "educational institutions" would mean institutions that impart education as understood in the Constitution" (para 43). Both "Pai Foundation and Inamdar have clearly denounced commercialization of education" (para 142). Source: Supreme Court of India (2012). Society for Un-aided Private Schools of Rajasthan Vs. Respondent: Union of India (UOI) and Ors. MANU/SC/0311/2012.



For instance, Deshpande (2006) argues how caste discrimination is "the product of durable, self-reproducing mechanisms that are systematic and systemic" (ibid, 2439). They demonstrate the existence of a filtering effect in higher education as it presupposes prior qualifications. Entrance examinations serve "as devices of social selection that (unduly) favor those with a better school education." (Deshpande and Zacharias, 2013: 22). It is therefore not surprising that the spread of higher education is very low in deprived social groups, also bringing to the fore the stark urban-rural and gender divide in terms of access to higher education (Ghosh, 2008).

With an excessive focus on primary education post-Jomtien in the 1990s, the government had started to recede from its public commitment to higher education leading to a demand and supply gap (Tilak, 2004). A vacuum created, was filled by private players in the form of deemed universities, colleges, vocational education and diploma courses. This increased 'public disinvestment in higher education' (ibid) with the state withdrawing and taking on the role of a (poor) regulator. The system continued to rely on reservations to hide the state's inability to meet the increasing demand for higher education in India.

Reservations in India are caste-based quotas whose most common criticism comes from their fixed and inflexible nature. The Constitutional provision of reservations in higher education and employment has become a major pivot of vote bank politics. Successive governments have sustained power using this without attempting any long-lasting educational policy change. The recent quota for economically weaker sections (EWS)⁴³ is a case in point. Nevertheless, as argued by Ghosh (2006), reservations remain a transparent and easily enforceable policy measure against the systemic social and economic exclusion suffered for generations by large populations.

According to Deshpande and Zacharias (2013), the most important function of reservation is the recognition and reminder of the social contract on which the Indian republic was founded. As Sinha (2017) argues, "...if affirmative action is to be effective higher education cannot be a scarce resource" (ibid, 1178).

⁴³ The Gol tabled the Constitution (One Hundred And Twenty-Fourth Amendment) Bill, 2019 which provides 10 percent additional quota for students of the Economically Weaker Sections (EWS) amongst the erstwhile Unreserved category or General category students.

The inability of the state to provide robust institutes of quality higher education not only increases existing educational inequalities, but reinforces social hierarchies, especially as expanding privatisation makes education a commodity rather than a public good. Inadequate policy measures against the movement towards excessive dependence on market forces (Tilak, 2008; 2014) has led higher education to become inaccessible to the poor and most marginalised sections of society, including women.

Even though the Supreme Court has given clear verdicts against commercialisation of education, the apex Court accords full administrative autonomy to private unaided educational institutions. This means that as the private sector expands, reservations for the socially marginalised such as SC, ST and OBC become unavailable.

Therefore, while efforts are made to create a globally competitive workforce in India via increasing private investment in higher education, the need to engage with critical development goals, ensuring liberal constitutional, democratic values and social inclusion, and furthering environmental sustainability received little attention. It is argued that the demographic impact of higher education will only be visible when it is also inclusive – one that provides opportunities for the historically marginalised (Goswami, 2012).

The private education sector needs to come to terms with the goal of inclusive education and diversity as necessary and worthwhile, not just in instrumental but also in constitutive terms. They need to build on the autonomy currently provided to private unaided institutions in deciding on the means and manner of ensuring such inclusiveness, through more comprehensive affirmative action. These pertain to what university education can do to further social justice, the goals of the liberal constitutional democracy, deepening intellectual pursuit, and enabling community engagement (Goswami, 2012).

The growth of the higher education sector is accompanied by widening disparities, especially gender, social and regional disparities. Experience has shown that the rapid expansion of the sector, largely through private institutions is accompanied by deepening disparities. A major public policy question is devising mechanisms to reduce inequality while expanding the system. These may include more robust and decentralised systems of regulation and targeted public investments towards higher education for the socially disadvantaged.

Research Themes on Education

A historical overview and analysis of educational provisions in contemporary India highlight some of the key concerns across the sectors of school, higher and teacher education. A few potential research themes that can help problematise the issues raised are presented below.

- Examination of major conceptual shifts in the meanings and purposes of education and understanding what is meant by quality education.

- Problematisation of education to understand how social, gender, economic, environmental and epistemic injustice is sustained and perpetuated; and how educational equality impedes the realisation of the full potential of education in enabling socially and environmentally sustainable societies.
- Problematisation of the current construct of 'learning crisis' and to examine how different kinds of inequalities, such as, class, caste, race, ethnicity, gender, disability, and educational inequality impact the development of disadvantaged learners and their learning outcomes.
- Exploration of how linkages between school and higher education can be forged with economic, social and environmental sustainability, via teacher education.
- Exploration of spatial inequality in school, teacher and higher education and its relationship with education for sustainable development
- Examination of how school, higher and professional education, including teacher education can be transformed to develop critical knowledges, capacities and teacher and student agency towards developing a socially and environmentally sustainable and just society.

Education for Climate Action

The Impact of Climate Change on India

Climate projections for India indicate a probable increase in both temperature and precipitation (Krishnan et al., 2020). While temperature increases will be experienced across most of the Indian subcontinent, substantial spatial variation in precipitation patterns is expected. Extreme weather events such as extreme precipitation and temperature are also projected to increase, along with a greater increase in night when compared to day temperatures (Kumar et al., 2006).



These changes are projected to impact many sectors, exacerbate existing climate-induced risks, and create new risks. Climate change is

projected to adversely impact India's food production, biodiversity, water supply and livelihoods. The country will face a twin challenge of undertaking climate adaptation and mitigation, the costs of which are likely to impact economic development (Sathaye et al., 2006). Climate change is also expected to detrimentally affect India's achievement of the Sustainable Development Goals (SDGs) in areas of energy, health, food and water security, housing and infrastructural services. Changes in precipitation and glacial retreat, can accentuate drought and flooding, impacting ecosystem services that are essential for rural livelihood security. An increase in cyclonic storms, storm surge and coastal flooding can impact water availability, a range of coastal livelihoods and put large populations who live in coastal cities at risk (MOEFCC, 2018).

India is one of the most disaster-prone regions of the world – nearly 85 percent of its area is vulnerable to one or multiple hazards (MOEFCC, 2015). Over 45 million hectares across 23 States and Union Territories are vulnerable and prone to flooding (ibid). An increase in global mean temperature of 1.5°C, compared to preindustrial levels, will lead to increasing desiccation in more than half of South Asia, impacting more than 790 million people (Aadhar & Mishra, 2019). Drought intensity and severity has increased substantially between 1972 and 2004, and droughts are projected to transition towards the coastal areas of southern India, central Maharashtra and the Indo-Gangetic plains in the future (Mallya et al., 2015). Food production is projected to be adversely affected by climate change, because of increasing water stress. Wheat production may reduce by 4-5 tonnes per Ha., for each 1°C increase of temperature (Aggarwal, 2008).

Sea level rise will impact many coastal cities and regions. This can lead to habitat loss, changes in agricultural land-use and drainage gradients resulting in increased flooding and subsequent increase in saltwater intrusion (Pramanik, 2017).

Climate change is known to exacerbate weather-induced health risks: increased frequency of heat and cold waves, and vector-borne diseases such as malaria and dengue. Heat-related mortality is expected to increase substantially, with metropolitan areas such as Delhi, Ahmedabad, Bengaluru, Mumbai and Kolkata projected to experience the highest absolute increases (Dholakia, et al, 2015).

Climate change is projected to impact many sectors, putting people and critical systems at risk. It is therefore in India's interest to enhance mitigation and adaptation action by focusing on better climate science, climate change education and institutional capacity building (Sathaye et al., 2006). The Government of India has recognised climate-induced challenges and been attempting to systematically address them through various programs and policies. The National Action Plan on Climate Change focusing on critical aspects of vulnerability (e.g. agriculture, water, the Himalayan ecosystem) and mitigation (solar mission, energy efficiency improvements and sustainable habitat) have defined the scale and scope of India's climate action. India is committed to participate in implementing the Paris Climate Agreement, but these efforts are contingent upon finance and technology transfer from the global aggregate pool. India has been intervening to alleviate climatic impacts in critical sectors like agriculture and urban development,

mitigation via a National Solar Mission, and its support to creating the Coalition for Disaster (and Climate) Resilient Infrastructure (CDRI).

Climate Change and the SDGs

Climate change is one of the most critical systemic risks to the achievement of sustainable development and the SDGs in general. The IPCC in its seminal Special Report on 1.5°C has outlined the potentially devastating impacts of dangerous climate change that would expose hundreds of millions of people to food and water insecurity, heat waves and extreme weather events linked to drought, flooding, cyclonic storms and surge, if the 1.5°C mean global temperature limit is crossed. For this, both adaptation and mitigation action around the four system transitions have to see concrete progress by the 2030s, including difficult choices around 50 percent emission reduction in a country where energy poverty impacts a few hundred million. Yet, many areas of India have already crossed this threshold locally and early evidence is starting to appear of climate impact that constrains reaching multiple SDG targets. The IPCC has argued that education and awareness building is key to enabling climate action.

There are strong linkages between climate action and almost all SDGs, and hence, the opportunity to join up SDG implementation and climate action. Target 13.3, under the Goal 13 on Climate Action, clearly identifies the task for climate change education by calling for 'Improv(ing) education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning'. In addition, some goals such as Goals 7, 8, 11, 12, 13, 14 and 15 provide explicit points of convergence for climate action and SDG implementation and can therefore, become priority areas for Climate Change Education (CCE). A holistic CCE curriculum frame at all levels can help integrate multiple dimensions of development with everyday experience and context and help breakdown multiple binaries between theory and practice, text and experience, local and universal knowledges, organised around the core principles of social, environmental and epistemic justice.

This may, however, be possible only with a re-imagination of curriculum content and pedagogy and enabling the agency of the teacher, especially to build from and respond to local context, innovation and search for implementable solutions to address local climate adaptation and mitigation needs and link them to the implementation of the SDGs.

Climate Change Education in India

According to the Global Climate Risk Index 2020 (Eckstein et al, 2020), India is the fifth most vulnerable country in the world to climate change. Over the last two decades, extreme weather events have increased in frequency and severity across much of the country. India is also seeing the rapid deployment of a range of climate solutions from renewable solar and wind power to proactive disaster management, in spite of a long-position in coal-based power generation. There is considerable opportunity to learn from past successes and failures and prepare for four critical systems transitions

over the 2020s around energy, industry, land, oceans and ecosystems; and urban and infrastructure as defined by the IPCC (Masson-Delmotte et al, 2018).

Education plays a critical role in this, both in preparing a new generation of citizens, practitioners and policymakers to accelerate and increase ambition around climate action. It can also help strengthen the enabling conditions that would make these dramatic changes possible, that have no precedence in human history and that of the Indian subcontinent,

Education, learning, and building awareness about risks and solutions are key to combating climate change (Mochzuki & Bryan 2015; Anderson, 2012). Climate change education (CCE) influences skills, attitude and behaviour change, driving individual change and societal transformation (Facer et al. 2020, O'Brien & Leichinko, 2019). While CCE falls under the broad umbrella of Education for Sustainable Development (ESD), in recent years, there have been calls for targeted focus on climate change (Mochzuki & Bryan, 2015).

Because of the systemic nature of climate action, CCE is inherently multidimensional and interdisciplinary, necessitating cooperation across knowledge systems (formal and informal) working across multiple levels (primary, secondary, higher and continuing education) and scales (local, regional, national and global) (Anderson, 2012). In particular, climate change curriculum development must leverage Indigenous and Local Knowledge (ILK) to help build locally relevant, culturally sensitive and incremental knowledge (Priyadarshini & Abhilash, 2019) to address 'wicked' anthropogenic problems. Thus, effective CCE will need to span formal educational interventions at multiple levels (e.g. school, university) to more informal processes such as large-scale public awareness campaigns and leveraging local knowledge systems, especially in relation to adaptation of natural systems and agricultural, animal husbandry, forestry and fishery-dependent livelihoods and cultures that depend on the sustainability of these ecosystem services. In this manner, it can help link development and climate in everyday life and livelihoods, with in-service training of professionals and public officials responsible for multiple streams of development, so it touches school and higher education where formal teaching-learning and interdisciplinary problem solving and knowledge creation may be situated.

An examination of the intersection of climate change and the SDGs has been undertaken to identify potential entry points to mainstream CCE into India's education system and build strong linkages with indigenous and local knowledge(s).

Integrating Climate Change into Education in India

India's revised National Education Policy (GoI, 2020) mentions climate change and environmental issues as part of its deference to the SDGs as the key "to empower learners to become aware of and understand global issues and to become active promoters of more peaceful, tolerant, inclusive, secure, and sustainable societies" (GoI, 2020 p. 37). It also makes links between disciplines (e.g. biology, chemistry, physics, agriculture, climate science) and the need for values-based CCE that is "holistic and multidisciplinary" and draws on "flexible and innovative curricula". The policy, however, provides little assistance to

operationalise CCE within schools of higher education or make it mandatory across educational levels, in a manner similar to disaster management via a Supreme Court order. Hence, the unrealised potential for the development of CCE needs to be realised across four levels of education in India – school, higher education, teacher education and continuing education. Indigenous and local knowledge will need to be integrated at all four levels

School Education

Environmental education has been made mandatory by the Central Board of Secondary Education (CBSE) from Class 1 to 12 (CBSE, 2005). There is no explicit focus on CCE in this.

A few NGOs, NPOs and other private actors are filling this gap between environmental and climate education in schools by creating innovative programs and courses on climate change and climate action outside the formal curriculum. For example, CEE's focus on schools and thematic focus on environment, climate change and sustainable development, CSE's Green School Program. Yet, this is currently only in a miniscule proportion of India's 1.5 million schools.

The Govt of India's DST and MoEFCC together have created a mobile exhibition called Science Express-Climate Action Special that was targeted at building awareness about climate change amongst school children.

CSE's Green School Programme is an environmental education programme directed to subtly sensitizing students to the environment, through hands-on and thought-provoking activities. It is also an environment management system that audits, through students, the consumption of natural resources within school campuses and helps schools become good environmental managers by deploying pragmatic solutions to reduce wastage of precious resources.

Some of the outcomes of the GSP are: Empowering students to use resources responsibly and efficiently and enable behavioural change by teaching and practicing sustainable living; providing credible data for Central and State governments for long-term policy change in school infrastructure/curriculum; helping schools become resource-efficient over time – i.e. to optimize energy efficiency, minimize waste-generation, and harvest and recycle water.

Higher education

In 2003, the University Grants Commission (UGC) introduced a six-month compulsory course on environmental studies for undergraduates from all disciplines across all Central universities (UGC, 2003). In addition, there are specialised post-graduate courses that focus on climate change and related subjects, in multiple universities. For example, MA/MSc. in Climate Change and Sustainability studies offered by the Tata Institute of Social Sciences

(TISS), MSc. in Climate Science and Policy by The Energy and Resources Institute (TERI), and several masters and PhD programs across related fields such as environmental studies, sustainable development, and renewable energy.

CEE India: The Management Education Centre on Climate Change (MECCC) - was established in partnership with Gujarat University with an aim to enhance knowledge on climate change and technical and social skills, facilitating appropriate mitigation and adaptation action. This Master of Science Course on Climate Change Impact Management was designed for students of various backgrounds, providing them knowledge about climate science, effects of climate change on natural and socio-economic systems as well as solutions like adaptation and mitigation including also national and international climate policy and everyone's contribution to sustainable development and climate protection.

Courses with a full or partial focus on climate change exist in multiple disciplines: geography, climate science, development studies, and technical courses such as engineering and water resource management.

A potential addition to climate change higher education offerings is the announcement of a School of Climate Change and Sustainability at the University of Delhi. The School is intended to train students to address and manage the challenges of climate change and sustainable development. It is unclear how this will be developed to address the gap between theory building and practice, socio-technical vs. socio-ecological transitions, and contests around justice for whom, what is valued and how that is integrated into the everyday practice of democracy.

IIHS' Urban Practitioners' Programme (UPP) is IIHS' education and capacity building programme for in-service senior, mid-career and early-career government officials and urban practitioners spanning disciplines and levels in public, private, academic and civil society institutions. The UPP portfolio spans a wide range of urban sustainability practices and seeks to provide: strategic perspectives to urban challenges, knowledge frameworks employed to appraise such challenges and skills to tackle them effectively and sustainably.

The UPP provides evidence-based and practical training on climate change (SDG 13), urban sustainability (SDG 11), poverty and inequality (SDGs 1 and 10), and sustainable water management (SDG 6), using a systems frame which draws on environmental sustainability, human well-being, and social equity.

Continuing education

There are some examples of climate change education for professionals in the form of mid-career or continuing education. One

example is CEE's professional and short-term training and capacity-building programmes on environment and sustainable development issues:

- *Training in Education and Communication for Sustainable Development*, a three-month programme for in-service professionals from around the world.
- Various Distance Learning Programmes for specific professional groups such as courses on environmental journalism.
- Teach and Learn Environmental Education Modules (TALEEM), which are short modules focusing on areas of special interest to educators, professionals and volunteers involved in Environment and Development.
- 'EE Processes in Formal Education Systems', an advanced International Training Programme for in-service professionals in the field of environment in Asia and Africa.

The Government of India has established vocational training programmes which overlap with multiple goals (e.g. SDG 8 on decent work and economic growth, and SDG 13 on climate action). The "Green Skill Development Programme" (GSDP) is expected to train over 0.5 million people from 2018-2020 and develop green skilled workers with the technical knowledge and commitment to help attain the Nationally Determined Contributions (NDCs), Sustainable Development Goals (SDGs), National Biodiversity Targets (NBTs), as well as Waste Management Rules (2016).

In 2015, the Government of India launched the Skill Council for Green Jobs (SCGJ) which aims to skill manufacturers and service providers to develop green businesses and green jobs. Green jobs include jobs in traditional sectors (e.g. manufacturing, construction) or in emerging sectors (e.g. renewable energy and energy efficient buildings) that contribute to preserving and/or restoring the environment and meeting sustainability goals (SCGJ, 2020). These initiatives have strong synergies with SDG 8 (Decent Work and Economic Growth) as well as SDG 7 (Affordable and Clean Energy), SDG 9 (Industry, Innovation and Infrastructure), and SDG 12 (Responsible Consumption and Production).

Indigenous and Local knowledge (ILK)

ILK plays a critical and central role in climate adaptation and in meeting the SDGs. From an extensive review of traditional knowledge in India, Priyadarshini & Abhilash (2019) surmise that ILK has specific lessons on nutritional security, biodiversity and water management, disaster risk management, and sustainable farming and seed conservation, in addition to mainstreaming scientific knowledge in these fields. This has strong potential interlinkages with meeting SDGs 1, 2, 3, 4, 8, 13, 15 and 17.

Despite growing "official interest in incorporating 'indigenous knowledge' into curriculum at the school level" (Sarangapani, 2003, p. 200), there are no formal educational policy initiatives to leverage ILK in CCE. Current barriers include perceived epistemological incompatibility of oral indigenous knowledge with more written practices and structures of formal schooling (Sarangapani, 2003). However, in climate change practice and research, there is a small but

growing movement to co-produce solutions that draw on multiple knowledge systems. For example:

- In the field of climate forecasts and advisories, NGOs and Krishi Vigyan Kendras are drawing on modelled climate projections and local perceptions of climate risk to build farmer awareness on climate change as well as improve their capacities to adapt to increasing climate risks.
- Across climate hotspots, there are several initiatives to revive traditional practices of water management (e.g. Pragma rebuilding *kuhls* or water channels in Lahaul, Himachal Pradesh that used natural slopes to transfer water for irrigation; Tarun Bhagat Sangh rejuvenating traditional water harvesting infrastructure (*johads*) in Alwar, Rajasthan; Keystone Foundation reviving indigenous sustainable harvest practices in the Nilgiri Biosphere Reserve).

These initiatives demonstrate that drawing on multiple knowledge systems can widen the suite of climate solutions. Recognising this in our education system via curriculum, enabling teacher agency, and innovative pedagogy is critical.

Research Themes on Climate Change Education

A few potential research themes are:

- The linkage between sustainable development, disaster risk reduction and climate action, at national, state and regional scales, and key actors and system transitions that are relevant to the Indian and global development agendas.
- The potential for climate change education to address questions of societal transitions and to build an epistemic and practice-based bridge between addressing the challenges of environmental, social and economic justice.
- The potential to join up local and indigenous knowledge on climate adaptation with climate, sustainability and urban science, and operationalise that in teaching-learning environments.
- Mapping gaps in capacity and knowledge of teacher educators, practitioners, mentors and students (at various levels) on climate change education and ESD, and defining appropriate strategies and mechanisms to close them. This includes building on practice-based repositories of knowledge, curricular framing and pedagogic strategies.

Education for Sustainable Cities & Communities

The largest incremental urbanisation in the world is expected to take place in India over the next few decades as its urban population rises from ~450 million to over ~700 million, overtaking the largest urbanisation in human history in China (UN, 2019). This is part of a

significant early-to mid-21st century shift of the global share of urban population, economic output, employment potential and investment towards Asia and Africa, especially to India.

This could be one of the largest opportunities for sustainable urbanisation in the world, if it simultaneously addresses deep ongoing challenges of urban poverty and inequality, providing sustainable livelihoods to an incremental population of over 10 million a year; enabling universal food security and social protection; access to universal healthcare and education; adequate and safe housing; along with access to basic services of water and sanitation, clean energy, public transport and telecommunication.



In short, implementing much of the SDG and New Urban Agenda across India's 8,000-odd metropolitan and million+ cities, towns and villages will be a critical dimension in the nation's unfolding urbanisation. However, there are deep gaps in performance at the national level and across states (Revi et al., 2019).

In theory, India's moderate to high growth rates and moderate savings and investment rates since the early 20th century – largely contributed by urban areas – should have been able to accelerate such a transition. In practice, income and wealth inequality, social stratification in terms of caste, gender, religion and ethnicity, precarity and conflict have deepened in most locations (Bazaz et al, 2016).

Urban areas in India are complex, multi-hazard environments and often climate change hot-spots. Most have significant populations in extreme poverty, who are highly vulnerable to everyday risk, as well as risks from extreme events. Cities typically accumulate environmental risks like flooding and poor sanitation through unplanned development (Jain et al., 2014). The urban poor and vulnerable, in the hundreds of millions, are being forced into increasingly untenable situations, by a mix of deeply exclusionary land markets and labour markets that offer little protection – both of which have been exposed during the COVID-19 pandemic and lockdown.

This has been driven by a mix of fragmented and contested governance, with little space for democratic engagement, local government autonomy and almost no agency; limited institutional capacity despite a 25-year old Constitutional mandate to local government, combined with financial distress and a deep paucity of financial transfers from national and state governments. This is also despite a pro-urban shift in national policy and public programmes over the last two decades and relatively large investments in urban renewal, housing and infrastructure over the last decade.

Added to this is expanding resource consumption, 'dirty' and poorly regulated production systems, which have led to widespread urban waste generation and pollution. This has contributed to a severe decline of urban environmental conditions, concentration of risk and expanding climate impact. Over the last two decades, deteriorating urban air and water quality are becoming key health risks in India. A solid waste management emergency has become increasingly difficult to address. Taken together, these are exacerbating impacts on terrestrial, aquatic and marine ecosystems, apart from expanding gross greenhouse gas emissions, in spite of India's low per capita emission levels.

India is currently one-third urban and two-third rural. This is expected to reach an equal share by 2050, even though urban areas concentrate the bulk of the economic output and incremental employment. Hence, unlike many other parts of the world, the territorial relationship between urban and rural areas in India are crucial for the implementation of the SDGs, especially to address poverty and inequality, food security and the provision of ecosystem services. A territorial approach that seeks to balance the economic potential of India's five mega-urban regions, five emerging urban clusters and five less developed regions that have large populations and uneven infrastructure and investment, is a potential way forward (Revi et al., 2019).

Addressing intersecting urban vulnerabilities

At the heart of this strategy to enable sustainable urbanisation in India, is the ability to address four forms of injustice or intersecting vulnerabilities to operationalise the SDGs and New Urban Agenda (NUA) commitment to leave 'no person, no place and no ecosystem behind' (UN, 2015; UN 2017).

Physical vulnerability: a large proportion of the built fabric in Indian cities is highly vulnerable to hazards and climate change, in the

absence of proper enforcement of building regulations, lack of maintenance and lack of financial resources. This is pronounced in the case of the urban poor who often live in hazardous locations because of exclusionary land markets and are unable to secure adequate housing and access to services.

Economic vulnerability: Cities agglomerate people and economic output in small geographic areas, and hence concentrate poverty, inequality and economic risk, especially in India where the bulk of the employment is in the informal sector with no social protection (Jain et al., 2014). Economic or environmental shock impacts triggers large scale precarity as observed during India's COVID-19 lockdown.

Environmental vulnerability: Due to rapid urbanisation, stress on local and regional environments is exacerbating existing risks and creating new ones, like air and water pollution and solid waste management. City services, and brown and green infrastructure are often unable to keep pace with population growth and urban expansion (Revi et al., 2020). With rapid change of land use within the cities and out growth, there is little or no available land for groundwater recharge, and urban forestry and agriculture, which makes cities highly vulnerable to drought (Bazaz et al., 2016). There has also been a decline in urban green cover, which has contributed to elevated temperatures which impact human health and productivity.

Social vulnerability: In spite of a wide range of Constitutional protections and entitlements, India is one of the most stratified societies in the world, with intersecting system of exclusion on the basis of caste, gender, religion, ethnicity and orientation. This along with the deepening of urban inequality is one of the most challenging issues to address, without which little progress may be made on other forms of vulnerability and exclusion.

Contemporary education in India takes limited cognisance of these vulnerabilities, especially in urban areas and their interlinkages and intersection with recognisable categories of caste, gender, class and ethnicity. Education for sustainable urbanisation will need to build its interdisciplinary knowledge structures, curricula and pedagogy to address this significant gap within the current urban sector and underlying disciplines and professional education practices.

Urban SDG Localisation

Nearly all the SDGs (including SDG 11) have targets that depend on local action. Localisation is the process of adapting, implementing, and monitoring the SDGs locally by local authorities and stakeholders who will typically adapt and implement them within a particular context (Kanuri et al., 2016).

SDG localisation involves local planning, implementing and monitoring of progress. Critical institutional, capacity and data gaps exist in India, which may jeopardise the implementation of the SDGs, if they remain unaddressed. Appropriate higher education and capacity building interventions have been identified as a key enabling condition for SDG localisation. Specific focus areas include a) functional and operational skills; b) technical skills, associated with specific sectors, such as water and sanitation engineering, urban

planning, integrated waste management, and civil and transport engineering; c) cultural shifts and changes in attitudes and practice among all stakeholders, including citizens, e.g. related to hygiene and public health (Kanuri et al., 2016).

Education for Sustainable Cities & Communities

A preliminary review of NCERT school textbooks reveals that education on cities and urban areas has been largely absent in the school education system in India, except for historical references to a lost civilisational past and some attempts to link urban governance with civics education.

Urban education figures at the undergraduate level via traditional professional programmes in architecture and planning (focusing on human habitat and the built environment) typically focus on the built environment (architecture), the use of land and its use as an instrument to define and manage development (planning), buildings and infrastructure systems for cities (engineering) or real estate. Disciplinary programmes in areas such as sociology and economics have an urban focus in a small cluster of institutions.

Post-graduate courses are typically specialised, focusing on particular aspects e.g. housing, urban design, or environmental and transportation planning. Most of these programmes have weak understanding of the urban as a site of sustainable development, or in addressing inequality and vulnerability, cutting across disciplinary boundaries.

The growth of India's economy in urban areas, and large public programmes in the areas of housing, urban renewal, urban infrastructure and smart city development have created an increased market for skilled urban practitioners. In addition, there is a recognition that officials and practitioners in urban areas need training and capacity building support to improve their current functioning and skills to enhance their understanding of India's unfolding urbanisation.

Sustainable cities and communities occupies a pan-SDG space i.e. the spatialisation or territorialisation of sustainable development to give life to the 2030 Agenda commitment to address inequality by 'leaving no person, no place and no ecosystem behind', the New Urban Agenda, the Paris Climate Agreement and the Sendai (Rudd et al., 2018; de Coninck et al., 2018; Revi, 2016; Revi & Rosenzweig, 2013).

Education for sustainable cities (the third of India lives in urban areas) and communities (the two-third living in rural areas) needs to explore relevant knowledge, capacities and the necessary agency to support the largest prospective urbanisation in history, as India's population approaches 1.5 billion. It will need to link this to critical interdisciplinary education within India's professional and higher education system (Pieterse and Revi, 2013).

There is a large unfulfilled gap between current educational programmes and the stated need that a handful of institutions are attempting to address, but it will require a dramatic scale-up without

being hampered by the conventional emphasis of educational practices and reforms in India.

IIHS is the pivotal national institution in this space in India, with its interdisciplinary Masters-level *Urban Fellows Programme*, that uses urban sustainability as a critical underlying theme to link grounded theory and practice. The UFP's curriculum draws from the IIHS curriculum co-created in partnership with the world's leading universities including MIT, UCL, UCT and UFABC, Sao Paulo, in addition to nearly a hundred practitioners and scholars from across India (IIHS, 2013; MIT, 2013).

IIHS' MOOC on Sustainable Cities is an example of providing cutting edge SDG-centric education that helps young professionals, urban practitioners and citizens to engage with questions of sustainable development of cities and the impact of climate change (see the box in the section on ESD for details).

Research Themes on Education for Sustainable Cities & Communities

A few potential research themes are:

- Extend SDG localisation from SDG11 to the other SDGs, and sites of knowledge creation/co-creation around them.
- Explore addressing intersecting urban vulnerabilities in the context of the SDGs, specifically the linkage between spatial, social and environmental justice.
- Explore post-COVID urban futures in the context of sustainable cities and communities and education for sustainable development.
- A critical examination of learning and pedagogy in interdisciplinary programmes of teacher education and sustainable urbanisation in India.
- Explore methods of wider public engagement and social learning around urban sustainability using the performing and fine arts and digital blended learning.
- Explore how education on sustainable cities and communities can be integrated into teacher education programmes in India.

Education for Sustainable Development

We begin with the premise that education plays a critical role in enabling 'sustainable futures', based on principles of 'social and environmental justice'. "Social and environmental justice", as indicated in the TESF Foundations Paper (2020), "can be understood as putting in place *social arrangements* that permit existing and future generations to *participate equitably* as peers in social life and in the construction of viable, *fairer economies*, that

foreground the well-being of all, while also recognising the *integrity of other species and of natural systems.*"

Developing a vision and strategy for sustainable development needs to consider specific historical, geographical, political, social and environmental contexts that represent a specific region and society. The prevailing relationship between education and sustainable development will need to be examined in this frame with three objectives: (a) to understand how educational and knowledge systems may be contributing to development that has been 'unsustainable'; (b) how education can be transformed to achieve social, economic and environmental change towards sustainable futures; and (c) how can SDG-specific education e.g. around SDG 11 (sustainable cities and communities) and SDG 13 (climate action), be integrated into existing higher education, teacher education and public education frames and processes.

Analysis of social, gender, environmental, economic and educational inequalities in school education in India indicates that most Private-Public Partnerships are not able to achieve the goal of quality equitable education for all children, in a highly stratified and exclusionary society with high prevalence of poverty and inequality. Many current Indian school educational programmes, and the knowledges they reproduce have contributed to unsustainable development as outlined in previous sections. There is, however, some space around the NCF and NCFTE to explore the potential for education to facilitate the progression to more sustainable futures. To enable this, it is therefore critical to strengthen the public system of education, reform underperforming government schools, appropriately regulate and incentivise private providers, engage with

concerns of teacher-education, and explore and deepen the knowledge(s) that are required to address complex inequalities, issues of diversity and social injustice within local, regional and national contexts.

School education needs to be viewed holistically, and must include social and emotional learning which can be a source of support for all children in times of crisis. The larger question of demographic and critical citizenship, understanding and sensitivity towards social and cultural diversity and care for the planet requires us to consider education as a public good. Education can therefore not be minimalised to achieve learning outcomes alone. In order to strengthen government schools and teacher education systems, sizeable immediate investments need to be made in a number of strategic areas to support those already being made by households and communities, to further the opportunities they desire for children and the youth.

In order to enable education to play a more substantive role in creating environmentally, economically and socially just societies, it is critical to explore and understand what is meant by quality education. To do this, we need to unpack the systemic nature of inequalities and the complex relationship between inclusion and exclusion that result from current institutional capacities and established local practices. This will enable a better understanding of how educational inequality impedes the realisation of the full potential of education. The role of higher education institutions and related research they engage in is critical, as demonstrated by the systematic development of women's studies in India from the mid-1970s and its impact on development policy, programmes and legislation (Minault, 1988).

The Bachelor of Elementary Education (BEIEd) is a teacher education programme instituted in the University of Delhi in 1994. Principles of interdisciplinary and transdisciplinary inquiry, dialogical interplay between theory and practice, deconstruction and reconstruction of school knowledge, engagement with constructs of human relations, the self and the practice of communication, and hands-on experience with creative and professional skills govern the structure and pedagogy of this four-year programme.

Student-teachers get the opportunity to examine prevalent normative discourses; and how these determine social relationships and life trajectories, using an interdisciplinary lens. The perceived neutrality of knowledge, merit and objectivity are contested while examining how these relate to the lived experiences of diverse communities. Theatre provides the platform to imagine and create 'possibilities' where none exist; and a context as well as medium of learning, enabling epistemic shifts in the notion of pedagogy; and the 'democratisation of classroom space'.

Components of the programme bring teachers closer to their aspirations and identities, allowing them to grow as communal beings with shared purposes. These provide them with conceptual tools that are emancipatory, allowing them to break the shackles of socialisation. Individual agency is realised through the 'socially constituted self', wherein socialisation is 'creatively reconfigured in relation to hopes, fears and desires for the future'. The focus on subjectivity creates opportunities to reconfigure personal identities. As teachers become aware of the social injustices around them, they learn to question and resist the projected image of education as apolitical.

In this larger perspective, education plays a critical intermediary role in facilitating interlinkages between the multiple sustainable development goals and targets. The question of knowledge(s), and the agency of teachers and citizens, in engaging with and shaping them, becomes central to the understanding of these interlinkages.

While there are successful experiments around interdisciplinary teacher education (B.El.Ed) and sustainable urbanisation (UFP), these are far from being recognised as mainstream practices. It is therefore critical that the epistemic frames within which much of education rests, will need to be revisited and re-examined.

Within this the interlinkages between universal or goal-based problem framing (which the SDGs represent) and general and disciplinary education will need to be critically examined, as outlined in the box below on the Tamil Nadu Urban Sanitation Support Programme (TNUSSP). The question of how SDG-related implementation on the ground can be linked to local ESD opportunities, research and the integration of grounded theory into higher education and teacher education curricula is still an open question.

A wider question on the potential for ESD to enable public education, including via digital blended learning (as presented in the box below on IIHS' Sustainable Cities MOOC) and other innovative mechanisms will need to be further explored.

IIHS' Tamil Nadu Urban Sanitation Support Programme (TNUSSP) attempts to bring about gender equality and deepen inclusion of sanitation workers within the wider community in the context of a large scale SDG 6 (Clean Water and Sanitation) programme that will help provide services to over 12 million people across over 600 towns and cities.

A School WASH program within that focuses on: infrastructure improvement in schools; identifying hygiene measures; and renovation of community toilets, together provide a direct linkage between SDGs 4, 5 and 6.

Massive Open Online Course (MOOC) on Sustainable Cities

IIHS in association with the SDG Academy produced and curated a MOOC on [Sustainable Cities](#) in 2017, that spans the range of concerns that link SDG 11 to the rest of the SDGs. This is currently hosted on edX and is one of the top-5 urban courses globally with over 33,000 registered learners from 150 countries. There is a large proportion of learners from India, because it uses a number of examples from India and the global south and is also available with Hindi sub-titles, enabling access to a large pool of learners.

The course uses an economic, social and ecological systems framing to examine how urban sustainability can be delivered with increasing productivity and reduced inequality; provision of universal basic services and infrastructure; protection of the urban environments via a partnership between public, enterprise sector and civil society institutions and citizens. The course is unique in that over its 11-week and 55 session length it uses 27 of the world's leading urbanists from all six continents as instructors, most of whom have been centrally involved in framing and negotiating SDG11 at the UN and are now implementing this across the world.

The course was shot by an IIHS team in 20 cities across all six continents, providing learners the opportunity to examine learning in their contexts with other SDG implementation processes across the world. It uses comparative urbanism e.g. the comparison of the long-term development trajectories of Mumbai and London as a device to examine the challenges of implementing universal frameworks (i.e. the SDGs) in diverse post-colonial contexts.

Re-imagining education will include attempts to bridge the gap between head, heart, and the hand; between theory and practice; and between knowledge and action. Such a holistic approach to

education is crucial to operationalise or localise sustainable development in context and potentially link formal education with ILK as outlined in the experience of the Nilgiris Field Learning Centre.

The Nilgiris Field Learning Centre and Indigenous & Traditional Knowledge

The Nilgiris Field Learning Centre (NFLC) is a partnership between Keystone Foundation and Cornell University where half a dozen Cornell undergraduates and the same number of Adivasi youth are brought together to engage and learn from each other, every year. The first phase of the course is classroom-based with a curriculum curated to examine the Nilgiri biosphere reserve (grasslands, wetlands, wildlife, shelter, food gathering techniques). Learning is based on observation. Cornell students bring strong analytical skills and theoretical knowledge to this exchange, while Adivasi youth bring nuances drawn from their lived experience of ecology and culture, making connections to their local language, water, resources and livelihoods. In the second phase of the course, Cornell students live in villages with Adivasi youth as their teachers. Students were required to undertake specific projects on water and waste, agriculture, wildlife, community wellness and health and environmental governance.

Research Themes on Education for Sustainable Development

A few potential research themes are:

- The potential for ESD to address questions of environmental, social, economic and epistemic justice in school and higher education contexts.
- The linkage between ESD and Climate change education and their separate and potentially joint outcomes, pedagogies and epistemic frameworks.
- The linkage between ESD and education on Sustainable Cities and Communities and their separate and potentially joint outcomes, pedagogies and epistemic frameworks.
- Explore how ESD can be integrated into teacher education programmes in India.
- Explore methods of wider public engagement and social learning around ESD using the performing and fine arts and digital blended learning.

Conclusion

This paper attempts to foreground key issues and concerns that need to be addressed in the redesign of education systems to enable social, economic and environmentally sustainable futures in India. It highlights the need to understand how social, gender, economic, environmental and epistemic injustice is sustained and perpetuated; how educational inequality impedes the realisation of the full potential of education in enabling socially and environmentally sustainable societies; and how this can be operationalised in the context of cities and climate change.

Climate change is expected to detrimentally affect India's achievement of the SDGs in the areas of poverty, health, food and water security, housing and infrastructural services and terrestrial and ocean ecosystem health. The largest incremental urbanisation in the world, expected to take place in India over the next few decades, will need to address ongoing challenges of poverty and inequality, providing sustainable livelihoods, food security, social protection, healthcare and education, and access to basic services of water, sanitation and clean energy.

Developing a vision and strategy for sustainable development needs to address specific historical, geographical, political, social and environmental contexts and inequalities that are often particular to regions and communities. Contemporary education in India takes limited cognisance of these contexts, inequalities and vulnerabilities, and their interlinkages.

The prevailing relationship between education and sustainable development will need to be examined with three objectives: to understand how educational and knowledge systems may

contribute to development that is 'unsustainable'; how education can be transformed to achieve social, economic and environmental change towards sustainable futures; and how SDG-specific education can be integrated into existing higher education, teacher education and public education frames and processes.

Education for sustainable futures will need to build interdisciplinary knowledge structures, curricula and pedagogy to address significant gaps between disciplines and underlying professional education practices. Formal educational initiatives will need to strengthen small but growing initiatives that co-produce solutions drawing upon multiple knowledge systems of practice and research, especially those based on indigenous and local knowledges and oral traditions.

To enable this, it is critical to strengthen the public system of education, reform underperforming government schools and public universities, appropriately regulate private educational providers, address concerns of teacher-education, and explore and deepen the knowledge(s) that are required to address complex inequalities, issues of diversity and social injustice within local, regional and national contexts. The larger aim would be to examine how school, higher and professional education, including teacher education can be transformed to develop critical knowledges and capacities; teacher and student agency towards developing a socially and environmentally sustainable and just society.

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Acknowledgements The support of the Economic and Social Research Council (UK) is gratefully acknowledged by TESF (award title 'UKRI GCRF Transforming Education Systems for Sustainable Development (TES4SD) Network Plus').

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Suggested Citation Batra, P., Revi, A., Bazaz, A., Singh, C. and Poonacha, P. (2021). TESF India Background Paper. Bristol, TESF and IIHS. <https://doi.org/10.5281/zenodo.4331432>

Version 1.0 published January 2021

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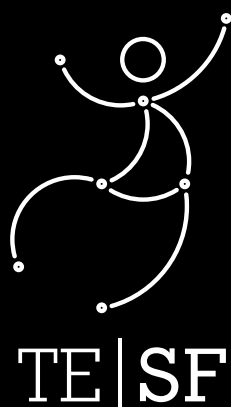
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